AIR QUALITY DIVISION

CHAPTER 6, SECTION 3

OPERATING PERMIT

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
122 West 25th Street
Cheyenne, Wyoming 82002

PERMIT NO. 3-3-021-1

Issue Date: **June 24, 2013**
Expiration Date: **August 8, 2017**
Effective Date: **June 24, 2013**
Replaces Permit No.: **3-3-021**

In accordance with the provisions of W.S. §35-11-203 through W.S. §35-11-212 and Chapter 6, Section 3 of the Wyoming Air Quality Standards and Regulations,

Williams Field Services Company
Saddle Ridge Compressor Station
Section 32, Township 28 North, Range 113 West
Sublette County, Wyoming

is authorized to operate a stationary source of air contaminants consisting of emission units described in this permit. The units described are subject to the terms and conditions specified in this permit. All terms and conditions of the permit are enforceable by the State of Wyoming. All terms and conditions of the permit, except those designated as not federally enforceable, are enforceable by EPA and citizens under the Act. A copy of this permit shall be kept on-site at the above named facility or at an acceptable alternate location.

Steven A. Dietrich — 6-24-13

Steven A. Dietrich, Administrator
Air Quality Division

Date

Todd — 6/24/13

Todd Parfitt, Director
Department of Environmental Quality

Date

WAQSR CHAPTER 6, SECTION 3 OPERATING PERMIT

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

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GENERAL INFORMATION
(modified June 24, 2013)

Company Name: Williams Field Services Company

Mailing Address: 4980 State Highway 374

City: Green River State: Wyoming Zip: 82935

Plant Name: Saddle Ridge Compressor Station

Plant Location: Section 32, Township 28 North, Range 113 West, Sublette County, Wyoming (Approximately 20 miles southwest of Big Piney)

Plant Mailing Address: P.O. Box 609

City: Big Piney State: Wyoming Zip: 83113

Name of Owner: Williams Field Services Company Phone: (918) 573-2000

Responsible Official: **T.J. Rinke** Phone: (918) 573-**9968**

Plant Manager/Contact: Stephenie Sinnett Phone: (307) 872-2807

DEQ Air Quality Contact: District 5 Engineer Phone: (307) 332-6755
510 Meadowview Drive
Lander, Wyoming 82520

SIC Code: 1389

Description of Process: The station is used to increase the pressure of a natural gas pipeline transporting gas to the Opal Gas Plant. The facility compresses and dehydrates field gas.

SOURCE EMISSION POINTS

This table may not include any or all insignificant activities at this facility.
(modified June 24, 2013)

SOURCE ID#	SOURCE DESCRIPTION	SIZE	CH. 6, SEC. 2 PERMITS
S1	Waukesha 12V-AT25GL Compressor Engine *	2274 hp	CT-1082A
S2	Waukesha 12V-AT25GL Compressor Engine *	2274 hp	CT-1082A
S5	Triethylene Glycol (TEG) Dehydrator	30MMSCFD	MD-676
S6	Triethylene Glycol (TEG) Dehydrator	30MMSCFD	MD-676
S7	Thermal Oxidizer	NA	MD-676
EmGen	Caterpillar G3412 Emergency Generator Engine *	**512** hp	**wv-14266 (Corrected)**
F1	Process Piping Fugitive Emissions	NA	None
T1	**Condensate Storage Tank**	**90 bbl**	**wv-3392**
T2	**Condensate Storage Tank**	**70 bbl**	**wv-3392**
None	**(19) Lube Oil, Waste Water, Glycol, Methanol, and Produced Water Storage Tanks**	**Less than 75 m^3 (472 bbl)**	**None**
None	(4) Reznor Heaters	~0.08 MMBtu/hr each	None

* The **Waukesha** engines are 4 stroke lean burn. **The Caterpillar engine is 4 stroke rich burn.**

TOTAL FACILITY ESTIMATED EMISSIONS
(modified June 24, 2013)

For informational purposes only. These emissions are not to be assumed as permit limits.

POLLUTANT	EMISSIONS (TPY)
CRITERIA POLLUTANT EMISSIONS	
Particulate Matter	Negligible
PM_{10} Particulate Matter	Negligible
Sulfur Dioxide (SO_2)	Negligible
Nitrogen Oxides (NO_X)	**70**
Carbon Monoxide (CO)	**106**
Volatile Organic Compounds (VOCs)	107
HAZARDOUS AIR POLLUTANT (HAP) EMISSIONS	15

Emission estimates are from permit CT-1082A **and wv-14266 (Corrected)**. HAP emissions consist primarily of formaldehyde which is **9.4 TPY**.

FACILITY-SPECIFIC PERMIT CONDITIONS

Facility-Wide Permit Conditions

(F1) FACILITY ENGINE CONFIGURATION
[WAQSR Ch 6, Sec 2 Permit/**Waiver** CT-1082A **and wv-14266 (Corrected)] (modified June 24, 2013)**

(a) The facility shall be limited to two Waukesha 12V-AT25GL lean burn **compressor** engines, **and one Caterpillar G3412 rich burn emergency generator engine.**

(b) Once an engine is removed from the facility, an engine cannot be installed and operated in its place unless authorized by an appropriate permit modification (except as allowed for temporary engine replacement under condition F6).

(c) The permittee may expand the engine configuration beyond that described in paragraph (a) upon receipt of a construction or modification permit issued under Chapter 6, Section 2 of WAQSR that authorizes such change. The permittee must, however, submit an application to modify this operating permit within 12 months of commencement of operation for any engine not already included in this permit.

Source-Specific Permit Conditions

(F2) VISIBLE EMISSIONS [WAQSR Ch 3, Sec 2; Ch 3, Sec 6(b)(i); Ch 6, Sec 2 Permit MD-676]

(a) The thermal oxidizer (unit S7) shall be operated and maintained to be smokeless, with no visible emissions except for periods not to exceed a total of five minutes during any two consecutive hours as determined by 40 CFR Part 60, Appendix A, Method 22.

(b) Visible emissions of any contaminant discharged into the atmosphere from any other single emission source shall not exhibit greater than 20 percent opacity except for one period or periods aggregating not more than six minutes in any one hour of not more than 40 percent opacity.

(F3) ENGINE NO_X AND CO EMISSIONS
[WAQSR Ch 6, Sec 2 Permit/**Waiver** CT-1082A **and wv-14266 (Corrected)] (modified June 24, 2013)**

(a) NO_X and CO emissions shall not exceed the limits specified in Table I.

(b) Compliance with the g/hp-hr limits is considered compliance with the lb/hr and TPY limits as long as each engine is operated at or below its site-rated capacity.

(c) For the Caterpillar G3412 engine:

(i) The engine shall be limited to 200 hours of operation per calendar year. The permittee shall install and maintain a non-resettable hours meter to demonstrate compliance with the hours limit in this condition.

(ii) The permittee shall operate and maintain the engine and monitoring equipment according to good air pollution control practices at all times, including startup, shutdown and malfunction.

Table I: NO_X, CO and VOC Emission Limits

Engine Description	NO_X			CO		
	g/hp-hr	lb/hr	TPY	g/hp-hr	lb/hr	TPY
Each Waukesha 12V-AT25GL (S1, S2)	1.5	7.5	33.0	2.25	11.3	49.4
Caterpillar G3412 (EmGen)	**17.0**	**19.2**	**1.9**	**5.0**	**5.6**	**0.6**

(F4) FUEL BURNING EQUIPMENT [WAQSR Ch 3, Sec 3]
NO_X emissions from the four Reznor heaters and each dehydration reboiler (units S5 and S6) shall not exceed 0.20 lb/MMBtu heat input.

(F5) DEHYDRATOR AND THERMAL OXIDIZER OPERATION [WAQSR Ch 6, Sec 2 Permit MD-676]

(a) Volatile organic compounds (VOC) and hazardous air pollutant (HAP) emissions associated with the glycol dehydrator units (units S5 and S6), which includes the glycol flash separator and the reboiler overhead still vent, shall be controlled with a thermal oxidizer control system (unit S7), with a total hydrocarbon control efficiency of at least 95 percent.

(b) Condensed liquids (water and hydrocarbons) shall be contained in a closed vessel. Non-condensable vapors off the condenser shall be destructed in the thermal oxidizer.

(c) The permittee shall maintain and operate the thermal oxidizer control system during all periods during which the dehydration units are operating such that it remains effective as a viable emissions control device.

(F6) TEMPORARY ENGINE REPLACEMENT [WAQSR Ch 6, Sec 3(h)(i)(I)]

(a) Should an engine break down or require an overhaul, the permittee may bring on site and operate a temporary replacement engine until repairs are made. Permanent replacement of an engine **must** be evaluated by the Division under Ch 6, Sec 2 of WAQSR to determine appropriate permitting action and evaluate the need for additional requirements resulting from the permanent replacement.

(b) The temporary replacement unit shall be identical or similar to the unit replaced with emission levels at or below those of the unit replaced.

(c) The permittee shall notify the Division in writing of such replacement within five working days, provide the date of startup of the replacement, and provide a statement regarding the applicability of any New Source Performance Standards (NSPS) in 40 CFR Part 60; any National Emission Standards for Hazardous Air Pollutants (NESHAPs) in 40 CFR Part 63; and Compliance Assurance Monitoring (CAM) in WAQSR Ch 7, Sec 3.

Testing Requirements

(F7) ADDITIONAL EMISSIONS TESTING [W.S. 35-11-110 and 40 CFR Part 60 Subpart JJJJ]

(a) The Division reserves the right to require additional testing as provided under condition G1 of this permit. Should testing be required, test methods found at 40 CFR Part 60, Appendix A, shall be used as follows:

(i) For visible emissions from the thermal oxidizer, Method 22 shall be used.

(ii) For visible emissions from other sources, Method 9 shall be used.

(iii) For any engine subject to the requirements of 40 CFR Part 60 Subpart JJJJ, testing for NO_X, CO and VOC emissions shall follow the requirements of §60.4244.

(iv) For NO_X emission from other sources Methods 1-4 and 7 or 7E shall be used.

(v) For CO emissions from other sources, Methods 1-4 and 10 shall be used.

(vi) For total hydrocarbon control efficiency of the thermal oxidizer, Methods 1-4 and 25A shall be used.

(vii) For alternative test methods, or methods used for other pollutants, the approval of the Administrator must be obtained prior to using the test method to measure emissions.

(b) Unless otherwise specified, testing shall be conducted in accordance with WAQSR Ch 5, Sec 2(h).

Monitoring Requirements

(F8) VISIBLE EMISSIONS MONITORING [WAQSR Ch 6, Sec 3(h)(i)(C)(I)]

(a) For visible emissions from the thermal oxidizer (unit S7), the permittee shall monitor and note the date, time and duration of any event when the unit exhibits visible emissions for more than five minutes during any two consecutive hours, to assess compliance with condition F2(a).

(b) For periodic monitoring for visible emissions from the Waukesha compressor engines (units S1 and S2), Caterpillar G3412 emergency generator engine, dehydration units (S5 and S6), and the Reznor heaters, the permittee shall monitor the type of fuel used to ensure natural gas is the sole fuel source for these units, to assess compliance with condition F2(b).

(F9) ENGINE EMISSIONS MONITORING

[WAQSR Ch 6, Sec 3(h)(i)(C)(I); Ch 6, Sec 2 Permit/**Waiver** CT-1082A and **wv-14266 (Corrected)**] **(modified June 24, 2013)**

(a) The permittee shall conduct NO_X and CO emissions testing for each Waukesha 12V-AT25GL engine (units S1 and S2), for comparison with the limits specified in condition F3, as follows:

(i) The permittee shall measure NO_X emissions at least semiannually.

(ii) The permittee shall measure CO emissions at least annually.

(iii) Notification of the test date shall be provided to the Division 15 days prior to testing. Results of the tests shall be submitted to the Division within 45 days of completing the tests.

(iv) The permittee shall measure NO_X and CO emissions from using the Division's portable analyzer monitoring protocol, or the EPA reference methods described in condition F7. The monitoring protocol can be downloaded at *http://deq.state.wy.us/aqd/operating.asp* or is available from the Division upon request.

(b) **The permittee shall conduct NO_X and CO emissions testing and hours monitoring for the Caterpillar G3412 engine (unit EmGen) for comparison with the limits specified in condition F3, as follows:**

(i) The permittee shall measure emissions at least once every five years.

(ii) **Testing for NO_X and CO emissions shall be conducted using the EPA Reference Methods described in condition F7 or a portable analyzer following the State of Wyoming's Portable Analyzer Protocol.**

(iii) **Notification of the test date shall be provided to the Division 15 days prior to testing. Results of the tests shall be submitted to the Division within 45 days of completing the tests.**

(iv) **The permittee shall monitor the operating hours using the hours meter required by condition F3(c).**

(c) For each engine:

(i) The permittee shall notify the Division within 24-hours if any engine testing/monitoring shows operation outside the emission limits specified in condition F3.

(ii) The permittee shall repair the engines no later than seven calendar days of such a testing/monitoring event, and shall repair and retest/monitorthe affected engine to demonstrate the engine has been returned to operation within the limits in condition F3.

(iii) Compliance with this condition regarding repair and retesting/monitoring shall not be deemed to limit the authority of the Division to cite the owner or operator for an exceedance of the emission limits for any testing which shows noncompliance.

(F10) DEHYDRATOR OPERATIONS AND THERMAL OXIDIZER MONITORING
[WAQSR Ch 6, Sec 3(h)(i)(C)(I); Ch 6, Sec 2 Permit MD-676]
For emissions from the two glycol dehydration units (units S5 and S6), the permittee shall adhere to the compliance assurance monitoring (CAM) plan, attached as Appendix A of this permit, and shall conduct monitoring as follows during active operation of the units to assess compliance with condition F5(a):

(a) The permittee shall maintain and operate a continuous temperature monitoring device with a continuous recording device, located in the thermal oxidizer (unit S7) downstream of the combustion zone

(i) An excursion, which is considered operation below the minimum operating temperature of the thermal oxidizer established in the approved CAM plan, shall trigger immediate corrective action.

(ii) The permittee shall follow all other applicable requirements under conditions CAM-1 through CAM-4 of this permit.

(b) The permittee may establish a new minimum operating temperature for the thermal oxidizerusing the following procedure:

(i) A performance test shall be conducted on the combustion unit to demonstrate a minimum 95 percent control efficiency, at the desired minimum operating temperature.

(ii) The performance test shall consist of three 1-hour simultaneous tests at the inlet and outlet of the combustion unit, following EPA Reference Methods 1-4 and 25A. As an alternative, the Division will consider determining the inlet mass loading using GRI GlyCalc, version 3.0 or higher.

(iii) A test protocol shall be submitted to the Division for review and approval prior to testing. Notification of the test date shall be provided to the Division 15 days prior to testing.

(iv) The test results shall be submitted to the Division within 45 days of completion. Upon approval of the results, the permittee shall submit an amended CAM plan to the Division to indicate the new minimum operating temperature.

(c) The permittee shall monitor the glycol dehydrator units (units S5 and S6) and thermal oxidizer (unit S7) to determine the date and duration of any time during active operation of the glycol dehydration units when the thermal oxidizer is not in operation.

Recordkeeping Requirements

(F11) TESTING AND MONITORING RECORDS [WAQSR Ch 6, Sec 3(h)(i)(C)(II); Ch 7, Sec 3(i)(ii); Ch 6 Sec 2 Permit/Waiver MD-676 **and wv-14266 (Corrected)] (modified June 24, 2013)**

(a) For any testing or monitoring required under conditions F7, F8(a), F9, F10(b) **and F16**, other than Method 9 or Method 22 observations, the permittee shall record, as applicable, the following:

(i) The date, place, and time of sampling, measurements, or observations;

(ii) The date(s) the analyses or observations were performed;

(iii) The company or entity that performed the analysesor observations;

(iv) The analytical techniques or methods used;

(v) The results of such analyses or observations;

(vi) The operating conditions and parameters as they existed at the time of sampling, measurement or observations; and

(vii) Any corrective actions taken.

(viii) For condition F8(a), additionally, the duration of time when the thermal oxidizer exhibits visible emissions for more than 5 minutes.

(b) For any Method 9 observations required by the Division under condition F7, the permittee shall keep field records in accordance with Section 2.2 of Method 9.

(c) For the Method 22 observations required by the Division under condition F7, the permittee shall keep field records in accordance with Sections 11.2 and 11.5 of Method 22.

(d) For the CAM monitoring required under condition F10(a):

(i) The permittee shall record the date, time, and duration of any excursions as well as the CAM indicator value(s) during each excursion.

(ii) The permittee shall maintain records of the continuous temperature monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan required pursuant to WAQSR Ch 7, Sec 3(h), any activities undertaken to implement a Quality Improvement Plan (QIP), and other supporting information required to be maintained under WAQSR Ch 7, Sec 3.

(e) For the monitoring required by condition F10(c), the permittee shall record the date and duration of any time during active operation of a glycol dehydration unit when the thermal oxidizer is not in operation.

(f) **For the monitoring required by condition F9(b)(iv), the permittee shall record the operating hours of the emergency generator.**

(g) The permittee shall maintain records of maintenance conducted on the Caterpillar G3412 engine (EmGen).

(h) The permittee shall retain on-site at the facility, or at an acceptable alternative location, the records kept in accordance with this condition for a period of at least 5 years from the date the records are generated. **These records shall be made available to the Division upon request.**

Reporting Requirements

(F12) NOTIFICATION OF TESTING AND SHUTDOWN [WAQSR Ch 6, Sec 2 Permits/**Waiver** MD-676, CT-1082A **and wv-14266 (Corrected)] (modified June 24, 2013)**

(a) For any testing performed under conditions F9(a) **and (b),** and F10(b), notification of the test date shall be provided at least 15 days prior to testing.

(b) Upon shutdown and removal of an engine from the facility, written notification is required within 15 days of removal. Such notification shall be submitted on a complete Engine Installation/Removal form. The form can be downloaded from the Air Quality website http://deq.state.wy.us/aqd or obtained from the Air Quality Division upon request.

(F13) TESTING AND MONITORING REPORTS [WAQSR Ch 6, Sec 3(h)(i)(C)(III)] **(modified June 24, 2013)**

(a) For any testing performed under conditions F7, F9, F10(b) **or F16,** the permittee shall report the results within 45 days of conducting the tests. The reports shall include the information indicated in condition F11(a).

(i) However, if testing for any engine shows operation out of compliance, the Division must be notified within 24 hours as indicated under condition F9**(c)**.

(b) For the monitoring required by conditions F8, **F9(b)** and F10, the following shall be reported to the Division by January 31 and July 31 each year:

(i) For the monitoring under condition F8(a), the date, time and duration when the thermal oxidizer (unit S7) exhibits visible emissions for more than 5 minutes.

(ii) For condition F8(b), documentation that Waukesha compressor engines (units S1 and S2), dehydration units (S5 and S6), and Reznor heaters are firing natural gas.

(iii) Summary results of the CAM monitoring required under condition F10(a), and any corrective actions taken upon detection of non-compliance. If the thermal oxidizer always operated above the minimum operating temperature this shall be stated in the report. The results shall include the following, as applicable:

(A) Summary information on the number, duration, and cause of excursions, and the corrective actions taken;

(B) Summary information on the number, duration, and cause for monitor downtime incidents;

(C) A description of the action taken to implement a QIP (if required) during the reporting period as specified in Chapter 7, Section 3 (h). Upon completion of a QIP, the permittee

shall include in the next summary report documentation that the implementation of the plan has reduced the likelihood of similar excursions.

(iv) The date, time and duration of any event when either glycol dehydrator unit (units S5 and S6) operated during which the thermal oxidizer (unit S7) was inoperable. If the thermal oxidizer was operable during all glycol dehydration unit operations during the reporting period, this shall be stated in the report.

(v) For condition F9(b)(iv), the calendar year-to-date operating hours for the emergency generator.

(c) All instances of deviations from the conditions of this permit must be clearly identified in each report.

(d) The reports shall reference this permit condition (F13) and shall be submitted in accordance with condition G4 of this permit.

(F14) GREENHOUSE GAS REPORTS [W.S. 35-11-110]

The permittee shall submit to the Division a summary of any report(s) required to be submitted to the EPA under 40 CFR Part 98.

(a) The reports shall be submitted to the Division within 60 days of submission to EPA, in a format as specified by the Division.

(b) The reports shall be submitted in accordance with condition G4(a)(i) of this permit, to the attention of the Division's Emission Inventory Program. A copy need not be sent to the DEQ Air Quality contact.

(F15) REPORTING EXCESS EMISSIONS & DEVIATIONS FROM PERMIT REQUIREMENTS [WAQSR Ch 6, Sec 3(h)(i)(C)(III)]

(a) General reporting requirements are described under the General Conditions of this permit. The Division reserves the right to require reports as provided under condition G1 of this permit.

(b) Emissions which exceed the limits specified in this permit and which are not reported under a different condition of this permit shall be reported annually with the emission inventory unless specifically superseded by condition G17, condition G19, or other condition(s) of this permit. The probable cause of such exceedance, the duration of the exceedance, the magnitude of the exceedance, and any corrective actions or preventative measures taken shall be included in this annual report. For sources and pollutants which are not continuously monitored, if at any time emissions exceed the limits specified in this permit by 100 percent, or if a single episode of emission limit exceedance spans a period of 24 hours or more, such exceedance shall be reported to the Division within one working day of the exceedance. (Excess emissions due to an emergency shall be reported as specified in condition G17. Excess emissions due to unavoidable equipment malfunction shall be reported as specified in condition G19.)

(c) Any other deviation from the conditions of this permit shall be reported to the Division in writing within 30 days of the deviation or discovery of the deviation.

Additional Requirements

(F16) INITIAL PERFORMANCE TESTING

[WAQSR Ch 6, Sec 2 Waiver wv-14266 (Corrected)] (modified June 24, 2013)

Performance tests shall be conducted on the Caterpillar G3412 by May 5, 2013. Prior to any performance testing required by this permit, a test protocol shall be submitted to the Division for approval, at least 30 days prior to testing.

(a) Testing for NO_X, CO and VOC emissions from the Caterpillar G3412 engine shall follow 40 CFR Part 60, Subpart JJJJ §60.4244, except that §60.8 only applies to an engine subject to Subpart JJJJ.

(b) Engine horsepower and other operating conditions shall be recorded during each test run and submitted with the test report.

(c) Notification of the test date shall be provided to the Division 15 days prior to testing. Results of the tests shall be submitted to the Division within 45 days of completing the tests.

WAQSR CHAPTER 5, SECTION 2 NEW SOURCE PERFORMANCE STANDARDS (NSPS) AND 40 CFR PART 60

SUBPART JJJJ REQUIREMENTS FOR STATIONARY SPARK IGNITION INTERNAL COMBUSTION ENGINES
(modified June 24, 2013)

SUBPART JJJJ [40 CFR Part 60 - Subparts A and JJJJ; and WAQSR Ch 5, Sec 2]

If applicable, the permittee shall meet all requirements of 40 CFR Part 60, Subparts A and JJJJ, and WAQSR Ch 5, Sec 2, as they apply to affected stationary spark ignition (SI) internal combustion engines (ICE). As required by condition F6, if an engine is replaced or reconstructed, subpart applicability will need to be reevaluated and a statement regarding applicability submitted to the Division.) For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator. An affected source is defined at §60.4230.

On March 11, 2013, according to information submitted to the Division by the permittee, there were no affected sources at the facility.

SUBPART OOOO REQUIREMENTS FOR CRUDE OIL AND NATURAL GAS PRODUCTION, TRANSMISSION AND DISTRIBUTION
(modified June 24, 2013)

SUBPART OOOO REQUIREMENTS [40 CFR 60 Subparts A and OOOO; and WAQSR Ch 5, Sec 2]

The permittee shall meet all applicable requirements of 40 CFR 60 Subparts A and OOOO and WAQSR Ch 5, Sec 2 as they apply to affected facilities as specified under §60.5365.

The subpart is available at http://www.gpoaccess.gov/cfr/retrieve.html, or is available from the Division upon request.

WAQSR CHAPTER 5, SECTION 3 NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAPS) AND 40 CFR PART 63

The permitted notified the Division by letter dated October 10, 2011 that the facility had removed two engines and was no longer a major source of HAP emissions. This facility was a major source of HAP emissions prior to removal of the engines, and as such, equipment present at the facility on October 10, 2011 remains subject to 40 CFR Part 63 requirements for major source determinations, when applicable, due to EPA's policy of "once in, always in".

SUBPART HH REQUIREMENTS FOR OIL AND NATURAL GAS PRODUCTION FACILITIES

SUBPART HH REQUIREMENTS [40 CFR Part 63, Subparts A and HH; and WAQSR Ch 5, Sec 3]

The permittee shall meet all requirements of 40 CFR Part 63, Subparts A and HH and WAQSR Ch 5, Sec 3, as they apply to affected sources as defined in §63.760, located at oil and natural gas production facilities that are **major or area** sources of hazardous air pollutants (HAP). The affected source includes each triethylene glycol (TEG) dehydration unit as specified in §63.760(b)(2), including units S5 and S6, which are subject to applicable requirements at major sources.

SUBPART ZZZZ REQUIREMENTS FOR STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES

SUBPART ZZZZ REQUIREMENTS [40 CFR Part 63 Subparts A and ZZZZ; and WAQSR Ch 5, Sec 3]

The permittee shall meet all applicable requirements of 40 CFR Part 63 Subparts A and ZZZZ and WAQSR Ch 5, Sec 3, as they apply to each affected source as indicated in §63.6590(a). An affected source is any existing, new, or reconstructed stationary RICE located at a major or area source of HAP emissions, excluding stationary RICE being tested at a stationary RICE test cell/stand. (As required by condition F6, if an engine is replaced or reconstructed, subpart applicability will need to be re-evaluated and a statement regarding applicability submitted to the Division.) Affected sources at this facility include the Waukesha S1 and S2 engines, and the Caterpillar G3412 engine, which are currently subject to applicable requirements for engines at a major source.

SUBPART DDDDD REQUIREMENTS FOR INDUSTRIAL, COMMERCIAL, AND INSTITUTIONAL BOILERS AND PROCESS HEATERS **(modified June 24, 2013)**

SUBPART DDDDD REQUIREMENTS [40 CFR Part 63 Subparts A and DDDDD; and WAQSR Ch 5, Sec 3]

The permittee shall meet all applicable requirements of 40 CFR Part 63 Subparts A and DDDDD and WAQSR Ch 5, Sec 3, as they apply to owners or operators of an industrial, commercial, or institutional boiler or process heater as defined in §63.7575 that is located at, or is part of, a major source of HAP as defined in §63.2 or §63.761 (40 CFR Part 63, Subpart HH, National Emission Standards for Hazardous Air Pollutants from Oil and Natural Gas Production Facilities), except as specified in §63.7491. This subpart applies to:

(a) Existing industrial, commercial, and institutional boilers and process heaters within a subcategory located at a major source, including the four Reznor heaters.

(b) New or reconstructed industrial, commercial, or institutional boilers or process heaters located at a major source.

These subparts are available at http://www.gpoaccess.gov/cfr/retrieve.html, or from the Division upon request.

WAQSR CHAPTER 7, SECTION 3
COMPLIANCE ASSURANCE MONITORING (CAM) REQUIREMENTS

WAQSR Ch 7, Sec 3 is available at http://deq.state.wy.us/aqd/standards.asp, or from the Division upon request.

(CAM-1) COMPLIANCE ASSURANCE MONITORING REQUIREMENTS [WAQSR Ch 7, Sec 3(b) and (c)]

The permittee shall follow the CAM plan attached as Appendix A of this permit and meet all CAM requirements of WAQSR Chapter 7, Section 3 as they apply to thermal oxidizer controlled glycol dehydration units. Compliance with the source specific monitoring, recordkeeping, and reporting requirements of this permit meets the monitoring, recordkeeping, and reporting requirements of WAQSR Ch 7, Sec 3, except for additional requirements specified under conditions CAM-2 through CAM-4.

(CAM-2) OPERATION OF APPROVED MONITORING [WAQSR Ch 7, Sec 3(g)]

(a) At all times, the permittee shall maintain the monitoring under this section, including but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment.

(b) Except for monitoring malfunctions, associated repairs, and required quality assurance or control activities, the permittee shall conduct all monitoring in continuous operation (or at all required intervals) at all times that the pollutant specific emissions unit is operating.

(c) Upon detecting an excursion, the permittee shall restore operation of the pollutant-specific emission unit to its normal or usual manner of operation as expeditiously as practicable in accordance withgood air pollution control practices. The response shall include minimizing the period of any start-up, shutdown or malfunction and taking any corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion.

(d) If the permittee identifies a failure to achieve compliance with an emission limit for which the monitoring did not provide an indication of an excursion while providing valid data, or the results of compliance or performance testing documents a need to modify the existing indicator ranges, the permittee shall promptly notify the Division and, if necessary, submit a proposed modification to this permit to address the necessary monitoring changes.

(CAM-3) QUALITY IMPROVEMENT PLAN (QIP) REQUIREMENTS [WAQSR Ch 7, Sec 3(h)]

(a) If the Division or the EPA Administrator determines, based on available information, that the permittee has used unacceptable procedures in response to an excursion or exceedance, the permittee may be required to develop and implement a Quality Improvement Plan (QIP).

(b) If required, the permittee shall maintain a written Quality Improvement Plan (QIP) and have it available for inspection.

(c) The plan shall include procedures for conducting one or more of the following:
  (i) Improved preventative maintenance practices.
  (ii) Process operation changes.
  (iii) Appropriate improvements to control methods.
  (iv) Other steps appropriate to correct control.
  (v) More frequent or improved monitoring (in conjunction with (i)- (iv) above).

(d) If a QIP is required, the permittee shall develop and implement a QIP as expeditiously as practicable and shall notify the Division if the period for completing the QIP exceeds 180 days from the date on which the need to implement the QIP was determined.

(e) Following implementation of a QIP, upon any subsequent determination under paragraph (a) above, the Division may require the permittee to make reasonable changes to the QIP if the QIP failed to address the cause of control device problems, or failed to provide adequate procedures for correcting control device problems as expeditiously as practicable.

(f) Implementation of a QIP shall not excuse the permittee from compliance with any existing emission limit(s) or any existing monitoring, testing, reporting, or recordkeeping requirements that may be applicable to the facility.

(CAM-4) SAVINGS PROVISIONS [WAQSR Ch 7, Sec 3(j)]

Nothing in the CAM regulations shall excuse the permittee from compliance with any existing emission limit or standard, or any existing monitoring, testing, reporting or recordkeeping requirement that may be applicable to the facility.

COMPLIANCE CERTIFICATION AND SCHEDULE

Compliance Certification [WAQSR Ch 6, Sec 3(h)(iii)(E)] **(modified June 24, 2013)**

(C1) (a) The permittee shall submit by January 31 each year a certification addressing compliance with the requirements of this permit. The certification shall be submitted as a stand-alone document separate from any monitoring reports required under this permit.

(b) (i) For visible emissions the permittee shall assess compliance with condition F2 by verifying natural gas was the sole fuel source used for the units listed in condition F8(b); and for the thermal oxidizer, by conducting monitoring required by condition F8(a) and reviewing records kept in accordance with condition F11(a)(viii).

(ii) For NO_X and CO emissions, **and the operating hours limit for the Caterpillar engine,** the permittee shall assess compliance with condition F3 by conducting monitoring required by condition F9.

(iii) For the dehydration units and the thermal oxidizer (units S5, S6 and S7), the permittee shall assess compliance with condition F5(a) and (c) by conducting the monitoring required by condition F10(a) and (c), and reviewing the records kept in accordance with condition F11(d) and (e).

(iv) For condition F5(b), the permittee shall verify that condensed liquids were contained in a closed vessel, and non-condensable vapors off the condenser were destructed in the thermal oxidizer.

(v) For greenhouse gas reporting, the permittee shall assess compliance with condition F14 by verifying that reports were submitted in accordance with condition F14(b).

(vi) For any engine subject to 40 CFR Part 60 Subpart JJJJ, the permittee shall assess compliance with Subpart JJJJ by conducting any applicable testing and monitoring required by §§60.4237, 60.4243, and 60.4244, and by reviewing the records required by §§60.4245 and 60.4246.

(vii) **For any affected facility subject to 40 CFR 60 Subpart OOOO, the permittee shall assess compliance with Subpart OOOO by conducting any applicable testing and monitoring required by §§60.5413 through 60.5417 and by reviewing any applicable records required by §60.5420.**

(viii) The permittee shall assess compliance with 40 CFR Part 63 Subpart HH by reviewing any records required by §§63.760 and 63.774.

(ix) The permittee shall assess compliance with 40 CFR Part 63 Subpart ZZZZ by conducting any applicable testing and monitoring required by §§63.6610 through 63.6640 and by reviewing the records required by §§63.6655 and 63.6665.

(x) The permittee shall assess compliance with 40 CFR Part 63 Subpart DDDDD by conducting any applicable testing and monitoring required by §§63.7510 through 63.7541 and by reviewing any records required by §§63.7555 and 63.7560.

(c) The compliance certification shall include:

(i) The permit condition or applicable requirement that is the basis of the certification;

(ii) The current compliance status;

(iii) Whether compliance was continuous or intermittent; and

(iv) The methods used for determining compliance.

(d) For any permit conditions or applicable requirements for which the source is not in compliance, the permittee shall submit with the compliance certification a proposed compliance plan and schedule for Division approval.

(e) The compliance certification shall be submitted to the Division in accordance with condition G4 of this permit and to the Assistant Regional Administrator, Office of Enforcement, Compliance, and Environmental Justice (8ENF-T), U.S. EPA - Region VIII, 1595 Wynkoop Street, Denver, CO 80202-1129.

(f) Determinations of compliance or violations of this permit are not restricted to the monitoring requirements listed in paragraph (b) of this condition; other credible evidence may be used.

Compliance Schedule [WAQSR Ch 6, Sec 3(h)(iii)(C) and (D)]

(C2) The permittee shall continue to comply with the applicable requirements with which the permittee has certified that it is already in compliance.

(C3) The permittee shall comply in a timely manner with applicable requirements that become effective during the term of this permit.

(C4) **RESERVED**

GENERAL PERMIT CONDITIONS

Powers of the Administrator: [W.S. 35-11-110]

(G1) (a) The Administrator may require the owner or operator of any point source to complete plans and specifications for any application for a permit required by the Wyoming Environmental Quality Act or regulations made pursuant thereto and require the submission of such reports regarding actual or potential violations of the Wyoming Environmental Quality Act or regulations thereunder.

(b) The Administrator may require the owner or operator of any point source to establish and maintain records; make reports; install, use and maintain monitoring equipment or methods; sample emissions, or provide such other information as may be reasonably required and specified.

Permit Renewal and Expiration: [WAQSR Ch 6, Sec 3(c)(i)(C), (d)(ii), (d)(iv)(B), and (h)(i)(B)] [W.S. 35-11-206(f)]

(G2) This permit is issued for a fixed term of five years. Permit expiration terminates the permittee's right to operate unless a timely and complete renewal application is submitted at least six months prior to the date of permit expiration. If the permittee submits a timely and complete application for renewal, the permittee's failure to have an operating permit is not a violation of WAQSR Chapter 6, Section 3 until the Division takes final action on the renewal application. This protection shall cease to apply after a completeness determination if the applicant fails to submit by the deadline specified in writing by the Division any additional information identified as being needed to process the application.

Duty to Supplement: [WAQSR Ch 6, Sec 3(c)(iii)]

(G3) The permittee, upon becoming aware that any relevant facts were omitted or incorrect information was submitted in the permit application, shall promptly submit such supplementary facts or corrected information. The permittee shall also provide additional information as necessary to address any requirements that become applicable to the facility after this permit is issued.

Submissions: [WAQSR Ch 6, Sec 3(c)(iv)] [W.S. 35-11-206(c)]

(G4) Any document submitted shall be certified as being true, accurate, and complete by a responsible official.

(a) Submissions to the Division.

(i) Any submissions to the Division including reports, certifications, and emission inventories required under this permit shall be submitted as separate, stand-alone documents and shall be sent to:

Administrator, Air Quality Division
122 West 25th Street
Cheyenne, Wyoming 82002

(ii) Unless otherwise noted elsewhere in this permit, a copy of each submission to the Administrator under paragraph (a)(i) of this condition shall be sent to the DEQ Air Quality Contact listed on page 3 of this permit.

(b) Submissions to EPA.

(i) Each certification required under condition C1 of this permit shall also be sent to:

Assistant Regional Administrator
Office of Enforcement, Compliance, and Environmental Justice (8ENF-T)
U.S. EPA - Region VIII
1595 Wynkoop Street
Denver, CO 80202-1129.

(ii) All other required submissions to EPA shall be sent to:

Office of Partnerships and Regulatory Assistance
Air and Radiation Program (8P-AR)
U.S. EPA - Region VIII
1595 Wynkoop Street
Denver, CO 80202-1129

Changes for Which No Permit Revision Is Required: [WAQSR Ch 6, Sec 3(d)(iii)]

(G5) The permittee may change operations without a permit revision provided that:

(a) The change is not a modification under any provision of title I of the Clean Air Act;

(b) The change has met the requirements of Chapter 6, Section 2 of the WAQSR and is not a modification under Chapter 5, Section 2 or Chapter 6, Section 4 of the WAQSR and the changes do not exceed the emissions allowed under the permit (whether expressed therein as a rate of emissions or in terms of total emissions); and

(c) The permittee provides EPA and the Division with written notification at least 14 days in advance of the proposed change. The permittee, EPA, and the Division shall attach such notice to their copy of the relevant permit. For each such change, the written notification required shall include a brief description of the change within the permitted facility, the date on which the change will occur, any change in emissions, and any permit term or condition that is no longer applicable as a result of the change. The permit shield, if one exists for this permit, shall not apply to any such change made.

Transfer of Ownership or Operation: [WAQSR Ch 6, Sec 3(d)(v)(A)(IV)]

(G6) A change in ownership or operational control of this facility is treated as an administrative permit amendment if no other change in this permit is necessary and provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittee has been submitted to the Division.

Reopening for Cause: [WAQSR Ch 6, Sec 3(d)(vii)] [W.S. 35-11-206(f)(ii) and (iv)]

(G7) The Division will reopen and revise this permit as necessary to remedy deficiencies in the following circumstances:

(a) Additional applicable requirements under the Clean Air Act or the WAQSR that become applicable to this source if the remaining permit term is three or more years. Such reopening shall be completed not later than 18 months after promulgation of the applicable requirement. No reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions have been extended.

(b) Additional requirements (including excess emissions requirements) become applicable to an affected source under the acid rain program. Upon approval by EPA, excess emissions offset plans shall be deemed to be incorporated into the permit.

(c) The Division or EPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit.

(d) The Division or EPA determines that the permit must be revised or revoked to assure compliance with applicable requirements.

Annual Fee Payment: [WAQSR Ch 6, Sec 3(f)(i), (ii), and (vi)] [W.S. 35-11-211]

(G8) The permittee shall, as a condition of continued operations, submit an annual fee to the Division as established in Chapter 6, Section 3 (f) of the WAQSR. The Division shall give written notice of the amount of fee to be assessed and the basis for such fee assessment annually. The assessed fee is due on receipt of the notice unless the fee assessment is appealed pursuant to W.S. 35-11-211(d). If any part of the fee assessment is not appealed it shall be paid to the Division on receipt of the written notice. Any remaining fee which may be due after completion of the appeal is immediately due and payable upon issuance of the Council'sdecision. Failure to pay fees owed the Division is a violation of Chapter 6, Section 3 (f) and W.S. 35-11-203 and may be cause for the revocation of this permit.

Annual Emissions Inventories: [WAQSR Ch 6, Sec 3(f)(v)(G)]

(G9) The permittee shall submit an annual emission inventory for this facility to the Division for fee assessment and compliance determinations within 60 days following the end of the calendar year. The emissions inventory shall be in a format specified by the Division.

Severability Clause: [WAQSR Ch 6, Sec 3(h)(i)(E)]

(G10) The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

Compliance: [WAQSR Ch 6, Sec 3(h)(i)(F)(I) and (II)] [W.S. 35-11-203(b)]

(G11) The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Air Act, Article 2 of the Wyoming Environmental Quality Act, and the WAQSR and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

Permit Actions: [WAQSR Ch 6, Sec 3(h)(i)(F)(III)] [W.S. 35-11-206(f)]

(G12) This permit may be modified, revoked, reopened, and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.

Property Rights: [WAQSR Ch 6, Sec 3(h)(i)(F)(IV)]

(G13) This permit does not convey any property rights of any sort, or any exclusive privilege.

Duty to Provide Information: [WAQSR Ch 6, Sec 3(h)(i)(F)(V)]

(G14) The permittee shall furnish to the Division, within a reasonable time, any information that the Division may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Division copies of records required to be kept by the permit, including information claimed and shown to be confidential under W.S. 35-11-1101 (a) of the Wyoming Environmental Quality Act. Upon request by the Division, the permittee shall also furnish confidential information directly to EPA along with a claim of confidentiality.

Emissions Trading: [WAQSR Ch 6, Sec 3(h)(i)(H)]

(G15) No permit revision is required, under any approved economic incentives, marketable permits, emissions trading and other similar programs or processes for changes that are provided for in this permit.

Inspection and Entry: [WAQSR Ch 6, Sec 3(h)(iii)(B)] [W.S. 35-11-206(c)]

(G16) Authorized representatives of the Division, upon presentation of credentials and other documents as may be required by law, shall be given permission to:

(a) enter upon the permittee's premises where a source is located or emissions related activity is conducted, or where records must be kept under the conditions of this permit;
(b) have access to and copy at reasonable times any records that must be kept under the conditions of this permit;
(c) inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;
(d) sample or monitor any substances or parameters at any location, during operating hours, for the purpose of assuring compliance with this permit or applicable requirements.

Excess Emissions Due to an Emergency: [WAQSR Ch 6, Sec 3(l)]

(G17) The permittee may seek to establish that noncompliance with a technology-based emission limitation under this permit was due to an emergency, as defined in Ch 6, Sec 3(l)(i) of the WAQSR. To do so, the permittee shall demonstrate the affirmative defense of emergency through properly signed, contemporaneous operating logs, or other relevant evidence that:

(a) an emergency occurred and that the permittee can identify the cause(s) of the emergency;
(b) the permitted facility was, at the time, being properly operated;
(c) during the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emissions standards, or other requirements in this permit;

(d) The permittee submitted notice of the emergency to the Division within one working day of the time when emission limitations were exceeded due to the emergency. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

Diluting and Concealing Emissions: [WAQSR Ch 1, Sec 4]

(G18) No person shall cause or permit the installation or use of any device, contrivance, or operational schedule which, without resulting in reduction of the total amount of air contaminant released tothe atmosphere, shall dilute or conceal an emission from a source. This condition shall not apply to the control of odors.

Unavoidable Equipment Malfunction: [WAQSR Ch 1, Sec 5]

(G19) (a) Any source believing that any emissions in excess of established regulation limits or standards resulted from an unavoidable equipment malfunction, shall notify the Division within 24 hours of the incident via telephone, electronic mail, fax, or other similar method. A detailed description of the circumstances of the incident as described in paragraph 5(a)(i)(A) Chapter 1, including a corrective program directed at preventing future such incidents, must be submitted within 14 days of the onset of the incident. The Administrator may extend this 14-day time period for cause.

(b) The burden of proof is on the owner or operator of the source to provide sufficient information to demonstrate that an unavoidable equipment malfunction occurred.

Fugitive Dust: [WAQSR Ch 3, Sec 2(f)]

(G20) The permittee shall minimize fugitive dust in compliance with standards in Ch 3, Sec 2(f) of WAQSR for construction/demolition activities, handling and transportation of materials, and agricultural practices.

Carbon Monoxide: [WAQSR Ch 3, Sec 5]

(G21) The emission of carbon monoxide in stack gases from any stationary source shall be limited as may be necessary to prevent ambient standards from being exceeded.

Asbestos: [WAQSR Ch 3, Sec 8]

(G22) The permittee shall comply with emission standards for asbestos during abatement, demolition, renovation, manufacturing, spraying and fabricating activities.

(a) No owner or operator shall build, erect, install, or use any article, machine, equipment, process, or method, the use of which conceals an emission which would otherwise constitute a violation of an applicable standard. Such concealment includes, but is not limited to, the use of gaseous dilutants to achieve compliance with a visible emissions standard, and the piecemeal carrying out of an operation to avoid coverage by a standard that applies only to operations larger than a specified size.

(b) All owners and operators conducting an asbestos abatement project, including an abatement project on a residential building, shall be responsible for complying with Federal requirements and State standards for packaging, transportation, and delivery to an approved waste disposal facility as provided in paragraph (m) of Ch 3, Sec 8.

(c) The permittee shall follow State and Federal standards for any demolition and renovation activities conducted at this facility, including:

(i) A thorough inspection of the affected facility or part of the facility where the demolition or renovation activity will occur shall be conducted to determine the presence of asbestos, including Category I and Category II non-friable asbestos containing material. The results of the inspection will determine which notification and asbestos abatement procedures are applicable to the activity.

(ii) The owner or operator shall follow the appropriate notification requirements of Ch 3, Sec 8(i)(ii).

(iii) The owner or operator shall follow the appropriate procedures for asbestos emissions control, as specified in Chapter 3, Section 8(i)(iii).

(d) No owner or operator of a facility may install or reinstall on a facility component any insulating materials that contain commercial asbestos if the materials are either molded and friable or wet-applied and friable after drying. The provisions of this paragraph do not apply to spray-applied insulating materials regulated under paragraph (j) of Ch 3, Sec 8.

(e) The permittee shall comply with all other requirements of WAQSR Ch 3, Sec 8.

Open Burning Restrictions: [WAQSR Ch 10, Sec 2]

(G23) The permittee conducting an open burn shall comply with all rules and regulations of the Wyoming Department of Environmental Quality, Division of Air Quality, and with the Wyoming Environmental Quality Act.

(a) No person shall burn prohibited materials using an open burning method, except as may be authorized by permit. ***"Prohibited materials"*** means substances including, but not limited to; natural or synthetic rubber products, including tires; waste petroleum products, such as oil or used oil filters; insulated wire; plastic products, including polyvinyl chloride ("PVC") pipe, tubing and connectors; tar, asphalt, asphalt shingles, or tar paper; railroad ties; wood, wood waste, or lumber that is painted or chemically treated; explosives or ammunition; batteries; hazardous waste products; asbestos or asbestos containing materials; or materials which cause dense smoke discharges, excluding refuse and flaring associated with oil and gas well testing, completions and well workovers.

(b) No person or organization shall conduct or cause or permit open burning for the disposal of trade wastes, for a salvage operation, for the destruction of fire hazards if so designated by a jurisdictional fire authority, or for firefighting training, except when it can be shown by a person or organization that such open burning is absolutely necessary and in the public interest. Any person or organization intending to engage in such open burning shall file a request to do so with the Division.

Sulfur Dioxide Emission Trading and Inventory Program [WAQSR Ch 14]

(G24) Any BART (Best Available Retrofit Technology) eligible facility, or facility which has actual emissions of SO_2 greater than 100 tpy in calendar year 2000 or any subsequent year, shall comply with the applicable requirements of WAQSR Ch 14, Sections 1 through 3, with the exceptions described in sections 2(c) and 3(a).

Stratospheric Ozone Protection Requirements: [40 CFR Part 82]

(G25) The permittee shall comply with all applicable Stratospheric Ozone Protection Requirements, including but not limited to:

(a) *Standards for Appliances* [40 CFR Part 82, Subpart F]
The permittee shall comply with the standards for recycling and emission reduction pursuant to 40 CFR Part 82, Subpart F - Recycling and Emissions Reduction, except as provided for motor vehicle air conditioners (MVACs) in Subpart B:

(i) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to §82.156.

(ii) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to §82.158.

(iii) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to §82.161.

(iv) Persons disposing of small appliances, MVACs, and MVAC-like appliances must comply with record keeping requirements pursuant to §82.166. ("MVAC-like appliance" is defined at §82.152).

(v) Persons owning commercial or industrial process refrigeration equipment must comply with the leak repair requirements pursuant to §82.166.

(vi) Owners/operators of appliances normally containing 50 or more pounds of refrigerant must keep records of refrigerant purchased and added to such appliances pursuant to §82.166.

(vii) The permittee shall comply with all other requirements of Subpart F.

(b) *Standards for Motor Vehicle Air Conditioners* [40 CFR Part 82, Subpart B]
If the permittee performs a service on motor (fleet) vehicles when this service involves ozone-depleting substance refrigerant in the MVAC, the permittee is subject to all the applicable requirements as specified in 40 CFR Part 82, Subpart B, Servicing of Motor Vehicle Air Conditioners. The term "motor vehicle" as used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed. The term "MVAC" as used in Subpart B does not include the air-tight sealed refrigeration system used as refrigerated cargo, or the system used on passenger buses using HCFC-22 refrigerant.

STATE ONLY PERMIT CONDITIONS
(modified June 24, 2013)

The conditions listed in this section are State only requirements and are not federally enforceable.

Ambient Standards

(S1) The permittee shall operate the emission units described in this permit such that the following ambient standards are not exceeded:

POLLUTANT	STANDARD	CONDITION	WAQSR CH. 2, SEC.
PM_{10} particulate matter	50 micrograms per cubic meter	annual arithmetic mean	2 (a)
	150 micrograms per cubic meter	24-hr average concentration with not more than one exceedance per year	
$PM_{2.5}$ particulate matter	15 micrograms per cubic meter	annual arithmetic mean	2 (b)
	35 micrograms per cubic meter	98th percentile 24-hr average concentration	
Nitrogen dioxide	**53 parts per billion**	**annual average concentration**	3
	100 parts per billion	**three-year average of the annual 98th percentile of the daily maximum 1-hr average concentration**	
	0.053 parts per million	**annual arithmetic mean**	
Sulfur **dioxide**	**75 parts per billion**	**three-year average of the annual (99th percentile) of the daily max 1-hr average**	4
	0.5 parts per million	**3-hr blocks not to be exceeded more than once per calendar year**	
Carbon monoxide	10 milligrams per cubic meter	max 8-hr concentration with not more than one exceedance per year	5
	40 milligrams per cubic meter	max 1-hr concentration with not more than one exceedance per year	
Ozone	**0.075** parts per million	**three-year average of the annual fourth-highest** daily maximum 8-hr average **concentration**	6
Hydrogen sulfide	70 micrograms per cubic meter	½ hour average not to be exceeded more than two times per year	7
	40 micrograms per cubic meter	½ hour average not to be exceeded more than two times in any five consecutive days	
Suspended sulfate	0.25 milligrams SO_3 per 100 square centimeters per day	maximum annual average	8
	0.50 milligrams SO_3 per 100 square centimeters per day	maximum 30-day value	
Lead and its compounds	0.15 micrograms per cubic meter	maximum arithmetic 3-month mean concentration for a 3-year period	10

Hydrogen Sulfide: [WAQSR Ch 3, Sec 7]

(S2) Any exit process gas stream containing hydrogen sulfide which is discharged to the atmosphere from any source shall be vented, incinerated, flared or otherwise disposed of in such a manner that ambient sulfur dioxide and hydrogen sulfide standards are not exceeded.

Odors: [WAQSR Ch 2, Sec 11]

(S3) (a) The ambient air standard for odors from any source shall be limited to an odor emission at the property line which is undetectable at seven dilutions with odor free air as determined by a scentometer as manufactured by the Barnebey-Cheney Company or any other instrument, device, or technique designated by the Division as producing equivalent results. The occurrence of odors shall be measured so that at least two measurements can be made within a period of one hour, these determinations being separated by at least 15 minutes.

(b) Odor producing materials shall be stored, transported, and handled in a manner that odors produced from such materials are confined and that accumulation of such materials resulting from spillage or other escape is prevented.

SUMMARY OF SOURCE EMISSION LIMITS AND REQUIREMENTS

Source ID#: **S1 and S2** Source Description: **(2) Waukesha 12V-AT25GL Compressor Engines**

Pollutant	Emissions Limit/Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	20 percent opacity [F2]	WAQSR Ch 3, Sec 2	Testing if required [F7]	Verification of natural gas firing [F8]	Record the results of any testing [F11]	Semiannually, report type of fuel fired [F13] Report excess emissions and permit deviations [F15]
NO_X	1.5 g/hp-hr, 7.5 lb/hr and 33.0 TPY [F3]	WAQSR Ch 6, Sec 2 Permit CT-1082A	Testing if required [F7]	Semiannual monitoring [F9]	Record monitoring results [F11]	15 day prior notification of testing [F12] Report results within 45 days [F13] Report excess emissions and permit deviations [F15]
CO	2.25 g/hp-hr, 11.3 lb/hr and 49.4 TPY [F3]	WAQSR Ch 6, Sec 2 Permit CT-1082A	Testing if required [F7]	Annual CO monitoring [F9]	Record monitoring results [F11]	15 day prior notification of testing [F12] Report results within 45 days [F13] Report excess emissions and permit deviations [F15]
Additional NO_X, CO, and VOC	WAQSR Ch 5, Sec 2; 40 CFR Part 60 Subparts A and JJJJ					
HAPs	WAQSR Ch 5, Sec 3; 40 CFR Part 63 Subparts A and ZZZZ					

These tables are intended only to highlight and summarize applicable requirements for each source. The corresponding permit conditions, listed in brackets, contain detailed descriptions of the compliance requirements. Compliance with the summary conditions in these tables may not be sufficient to meet permit requirements. These tables may not reflect all emission sources at this facility.

Source ID#: **EmGen** Source Description: **Caterpillar G3412 Emergency Generator Engine (modified June 24, 2013)**

Pollutant	Emissions Limit/Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	20 percent opacity [F2]	WAQSR Ch 3, Sec 2	Testing if required [F7]	Verification of natural gas firing [F8]	Record the results of any testing [F11]	Semiannually, report type of fuel fired [F13] Report excess emissions and permit deviations [F15]
NO_X	**17.0 g/hp-hr, 19.2 lb/hr and 1.9 TPY. 200 hours of operation. [F3]**	**WAQSR Ch 6, Sec 2 Waiver wv-14266 (Corrected)**	**Testing if required [F7]** **Initial Performance Test [F16]**	**Test every 5 years, monitor operating hours [F9]**	**Record monitoring results [F11]**	**15 day prior notification of testing [F12]** **Report results within 45 days. Semiannual operating hours [F13]** **Report excess emissions and permit deviations [F15]**
CO	**5.0 g/hp-hr, 5.6 lb/hr and 0.6 TPY. 200 hours of operation. [F3]**	**WAQSR Ch 6, Sec 2 Waiver wv-14266 (Corrected)**	**Testing if required [F7]** **Initial Performance Test [F16]**	**Test every 5 years, monitor operating hours [F9]**	**Record monitoring results [F11]**	**15 day prior notification of testing [F12]** **Report results within 45 days. Semiannual operating hours [F13]** **Report excess emissions and permit deviations [F15]**
VOC	**200 hours of operation. [F3]**	**WAQSR Ch 6, Sec 2 Waiver wv-14266 (Corrected)**	**Testing if required [F7]** **Initial Performance Test [F16]**	**Monitor operating hours [F9]**	**Record monitoring results [F11]**	**15 day prior notification of testing [F12]** **Report results within 45 days. Semiannual operating hours [F13]** **Report excess emissions and permit deviations [F15]**
NO_X, CO, and VOC	WAQSR Ch 5, Sec 2; 40 CFR Part 60 Subparts A and JJJJ					
HAPs	WAQSR Ch 5, Sec 3; 40 CFR Part 63 Subparts A and ZZZZ					

These tables are intended only to highlight and summarize applicable requirements for each source. The corresponding permit conditions, listed in brackets, contain detailed descriptions of the compliance requirements. Compliance with the summary conditions in these tables may not be sufficient to meet permit requirements. These tables may not reflect all emission sources at this facility.

Source ID#: **S5 and S6** Source Description: **(2) TEG Dehydration Units-dehydration vent and reboiler**

Pollutant	Emissions Limit/Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	20 percent opacity [F2]	WAQSR Ch 3, Sec 2	Testing if required [F7]	Verification of natural gas firing [F8]	Record the results of any testing [F11]	Semiannually, report type of fuel fired [F13] Report excess emissions and permit deviations [F15]
NO_X	Dehydration reboilers: 0.20 lb/MMBtu [F4]	WAQSR Ch 3, Sec 3	Testing if required [F7]	None	Record the results of any testing [F11]	Report excess emissions and permit deviations [F15]
VOCs and HAPs	Control emissions with the thermal oxidizer. Contain condensable liquids in a closed vessel. [F5]	WAQSR Ch 6, Sec 2 Permit MD 676	Testing if required [F7]	Monitor times of active operation of the units when the thermal oxidizer is not in use [F10]	Record the date, time and duration of uncontrolled operation [F11]	Semiannually, report date, time and duration of uncontrolled operation [F13] Report excess emissions and permit deviations [F15]
Benzene	WAQSR Ch 5, Sec 3; 40 CFR Part 63 Subparts A and HH					

Source ID#: **S7** Source Description: **Thermal Oxidizer**

Pollutant	Emissions Limit/Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	Smokeless operation [F2]	WAQSR Ch 6, Sec 2 Permit MD 676	Testing if required [F7]	Monitor for visible emissions [F8]	Record visible emissions [F11]	Semiannually, report excess visible emissions [F13] Report excess emissions and permit deviations [F15]
VOCs and HAPs	Control VOC/HAP emissions from dehydration units [F5]	WAQSR Ch 6, Sec 2 Permit MD 676	Testing if required [F7]	CAM - monitor temperature continuously. Monitor times of active operation of either dehydrator when the thermal oxidizer is not in use [F10]	Maintain records of temperature from the recording device. Record the date, time and duration of uncontrolled dehydrator operations [F11]	Semiannually, report CAM results. Report date, time and duration of uncontrolled dehydrator operation [F13] Report excess emissions and permit deviations [F15]

These tables are intended only to highlight and summarize applicable requirements for each source. The corresponding permit conditions, listed in brackets, contain detailed descriptions of the compliance requirements. Compliance with the summary conditions in these tables may not be sufficient to meet permit requirements. These tables may not reflect all emission sources at this facility.

Source ID#: **None** Source Description: **(4) Reznor Heaters**

Pollutant	Emissions Limit/Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	20 percent opacity [F2]	WAQSR Ch 3, Sec 2	Testing if required [F7]	Verification of natural gas firing [F8]	Record the results of any testing [F11]	Semiannually, report type of fuel fired [F13] Report excess emissions and permit deviations [F15]
NO_X	0.20 lb/MMBtu of heat input [F4]	WAQSR Ch 3, Sec 3	Testing if required [F7]	None	Record the results of any testing [F11]	Report excess emissions and permit deviations [F15]
HAPs	WAQSR Ch 5, Sec 3; 40 CFR Part 63 Subparts A and DDDDD					

These tables are intended only to highlight and summarize applicable requirements for each source. The corresponding permit conditions, listed in brackets, contain detailed descriptions of the compliance requirements. Compliance with the summary conditions in these tables may not be sufficient to meet permit requirements. These tables may not reflect all emission sources at this facility.

ABBREVIATIONS
(modified June 24, 2013)

ACFM	Actual cubic feet per minute
AFRC	Air-fuel ratio controls
AQD	Air Quality Division
BACT	Best available control technology (see Definitions)
bbl	**Barrels**
Btu	British thermal unit
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
C.F.R.	Code of Federal Regulations
CO	Carbon monoxide
DEQ	Wyoming Department of Environmental Quality
EPA	United States Environmental Protection Agency (see Definitions)
ESP	Electrostatic Precipitator
g/hp-hr	Gram(s) per horsepower hour
gal	Gallon(s)
gr	Grain(s)
H_2S	Hydrogen sulfide
HAP(s)	Hazardous air pollutant(s)
hp	Horsepower
hr	Hour(s)
lb	Pound(s)
M	Thousand
MACT	Maximum available control technology (see Definitions)
mfr	Manufacturer
mg	Milligram(s)
MM	Million
MVACs	Motor vehicle air conditioners
NMHC(s)	Non-methane hydrocarbon(s)
NO_X	Oxides of nitrogen
NSCR	Non-selective catalytic reduction
O_2	Oxygen
PM	Particulate matter
PM_{10}	Particulate matter less than or equal to a nominal diameter of 10 micrometers
ppmv	Parts per million (by volume)
ppmw	Parts per million (by weight)
QIP	Quality Improvement Plan
RICE	Reciprocating internal combustion engine
SCF	Standard cubic foot (feet)
SCFD	Standard cubic foot (feet) per day
SCM	Standard cubic meter(s)
SIC	Standard Industrial Classification
SO_2	Sulfur dioxide
SO_X	Oxides of sulfur
TBD	To be determined
TPD	Ton(s) per day
TPH	Ton(s) per hour
TPY	Tons per year
U.S.C.	United States Code
µg	Microgram(s)
VOC(s)	Volatile organic compound(s)
W.S.	Wyoming Statute
WAQSR	Wyoming Air Quality Standards & Regulations (see Definitions)
4SLB, 4SRB	4-stroke lean burn, 4-stroke rich burn

DEFINITIONS

"Act" means the Clean Air Act, as amended, 42 U.S.C. 7401, *et seq.*

"Administrator" means Administrator of the Air Quality Division, Wyoming Department of Environmental Quality.

"Applicable requirement" means all of the following as they apply to emissions units at a source subject to Chapter 6, Section 3 of the WAQSR (including requirements with future effective compliance dates that have been promulgated or approved by the EPA or the State through rulemaking at the time of issuance of the operating permit):

(a) Any standard or other requirement provided for in the Wyoming implementation plan approved or promulgated by EPA under title I of the Act that implements the relevant requirements of the Act, including any revisions to the plan promulgated in 40 C.F.R. Part 52;

(b) Any standards or requirements in the WAQSR which are not a part of the approved Wyoming implementation plan and are not federally enforceable;

(c) Any term or condition of any preconstruction permits issued pursuant to regulations approved or promulgated through rulemaking under title I, including parts C or D of the Act and including Chapter 5, Section 2 and Chapter 6, Sections 2 and 4 of the WAQSR;

(d) Any standard or other requirement promulgated under Section 111 of the Act, including Section 111(d) and Chapter 5, Section 2 of the WAQSR;

(e) Any standard or other requirement under Section 112 of the Act, including any requirement concerning accident prevention under Section 112(r)(7) of the Act and including any regulations promulgated by EPA and the State pursuant to Section 112 of the Act;

(f) Any standard or other requirement of the acid rain program under title IV of the Act or the regulations promulgated thereunder;

(g) Any requirements established pursuant to Section 504(b) or Section 114(a)(3) of the Act concerning enhanced monitoring and compliance certifications;

(h) Any standard or other requirement governing solid waste incineration, under Section 129 of the Act;

(i) Any standard or other requirement for consumer and commercial products, under Section 183(e) of the Act (having to do with the release of volatile organic compounds under ozone control requirements);

(j) Any standard or other requirement of the regulations promulgated to protect stratospheric ozone under title VI of the Act, unless the EPA has determined that such requirements need not be contained in a title V permit;

(k) Any national ambient air quality standard or increment or visibility requirement under part C of title I of the Act, but only as it would apply to temporary sources permitted pursuant to Section 504(e) of the Act; and

(l) Any state ambient air quality standard or increment or visibility requirement of the WAQSR.

(m) Nothing under paragraphs (A) through (L) above shall be construed as affecting the allowance program and Phase II compliance schedule under the acid rain provision of Title IV of the Act.

"BACT" or "Best available control technology" means an emission limitation (including a visible emission standard) based on the maximum degree of reduction of each pollutant subject to regulation under the WAQSR or regulation under the Federal Clean Air Act, which would be emitted from or which results for any proposed major emitting facility or major modification which the Administrator, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application or production processes and available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant. If the Administrator determines that technological or economic limitations on the application of measurement methodology to a particular class of sources would make the imposition of an emission standard infeasible, he may instead prescribe a design, equipment, work practice or operational standard or combination thereof to satisfy the requirement of Best Available Control Technology. Such standard shall, to the degree possible, set forth the emission reduction achievable by implementation of such design, equipment, work practice, or operation and shall provide for compliance by means which achieve equivalent results. Application of BACT shall not

result in emissions in excess of those allowed under Chapter 5, Section 2 of the WAQSR and any other new source performance standard or national emission standards for hazardous air pollutants promulgated by EPA but not yet adopted by the state.

"Department" means the Wyoming Department of Environmental Quality or its Director.

"Director" means the Director of the Wyoming Department of Environmental Quality.

"Division" means the Air Quality Division of the Wyoming Department of Environmental Quality or its Administrator.

"Emergency" means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

"EPA" means the Administrator of the U.S. Environmental Protection Agency or the Administrator's designee.

"Fuel-burning equipment" means any furnace, boiler apparatus, stack, or appurtenances thereto used in the process of burning fuel or other combustible material for the purpose of producing heat or power by indirect heat transfer.

"Fugitive emissions" means those emissions which could not reasonably pass through a stack chimney, vent, or other functionally equivalent opening.

"Insignificant activities" means those activities which are incidental to the facility's primary business activity and which result in emissions of less than one ton per year of a regulated pollutant not included in the Section 112 (b) list of hazardous air pollutants or emissions less than 1000 pounds per year of a pollutant regulated pursuantto listing under Section 112 (b) of the Act provided, however, such emission levels of hazardous air pollutants do not exceed exemptions based on insignificant emission levels established by EPA through rulemaking for modification under Section 112 (g) of the Act.

"MACT" or "Maximum achievable control technology" means the maximum degree of reduction in emissions that is deemed achievable for new sources in a category or subcategory that shall not be less stringent than the emission control that is achieved in practice by the best controlled similar source, as determined by the Administrator. Emission standards promulgated for existing sources in a category or subcategory may be less stringent than standards for new sources in the same category or subcategory but shall not be less stringent, and may be more stringent than:

(a) the average emission limitation achieved by the best performing 12 percent of the existing sources (for which the Administrator has emission information), excluding those sources that have, within 18 months beforethe emission standard is proposed or within 30 months before such standard is promulgated, whichever is later, first achieved a level of emission rate or emission reduction which complies, orwould comply if the source is not subject to such standard, with the lowest achievable emission rate applicable to the source category and prevailing at the time, in the category or subcategory for categories and subcategories with 30 or more sources, or

(b) the average emission limitation achieved by the best performing five sources (for which the Administrator has or could reasonably obtain emissions information) in the category or subcategory for categories or subcategories with fewer than 30 sources.

"Modification" means any physical change in, or change in the method of operation of, an affected facility which increases the amount of any air pollutant (to which any state standards applies) emitted by such facility or which results in the emission of any such air pollutant not previously emitted.

"Permittee" means the person or entity to whom a Chapter 6, Section 3 permit is issued.

"Potential to emit" means the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall be treated as part of its design if the limitation is enforceable by EPA and the Division. This term does not alter or affect the use of this term for any other purposes under the Act, or the term "capacityfactor" as used in title IV of the Act or the regulations promulgated thereunder.

"Regulated air pollutant" means the following:

(a) Nitrogen oxides (NO_X) or any volatile organic compound;

(b) Any pollutant for which a national ambient air quality standardhas been promulgated;

(c) Any pollutant that is subject to any standard established in Chapter 5, Section 2 of the WAQSR or Section 111 of the Act;

(d) Any Class I or II substance subject to a standard promulgated under or established by title VI of the Act; or

(e) Any pollutant subject to a standard promulgated under Section 112 or other requirements established under Section 112 of the Act, including Sections 112(g), (j), and (r) of the Act, including the following:

(i) Any pollutant subject to requirements under Section 112(j) of the Act. If EPA fails to promulgate a standard by the date established pursuant to Section 112(e) of the Act, any pollutant for which a subject source would be major shall be considered to be regulated on the date 18 months after the applicable date established pursuant to Section 112(e) of the Act; and

(ii) Any pollutant for which the requirements of Section 112(g)(2) of the Act have been met, but only with respect to the individual source subject to Section 112(g)(2) requirement.

(f) Pollutants regulated solely under Section 112(r) of the Act are to be regulated only with respect to the requirements of Section 112(r) for permits issued under this Chapter 6, Section 3 of the WAQSR.

"Renewal" means the process by which a permit is reissued at the end of its term.

"Responsible official" means one of the following:

(a) For a corporation:

(i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or

(ii) A duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either:

(A) the facilities employ more than 250 persons or have gross annual sales or expenditures exceeding $25 million (in second quarter 1980 dollars); or

(B) the delegation of authority to such representative is approved in advance by the Division;

(b) For a partnership or sole proprietorship: a general partner or the proprietor, respectively;

(c) For a municipality, State, Federal, or other public agency: Either a principal executive officer or ranking elected official. For the purposes of this part, a principal executive officer of a federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency; or

(d) For affected sources:

(i) The designated representative or alternate designated representative in so far as actions, standards, requirements, or prohibitions under title IV of the Act or the regulations promulgated thereunder are concerned; and

(ii) The designated representative, alternate designated representative, or responsible official under Chapter 6, Section 3 (b)(xxvi) of the WAQSR for all other purposes under this section.

"WAQSR" means the Wyoming Air Quality Standards and Regulations promulgated under the Wyoming Environmental Quality Act, W.S. §35-11-101, *et seq.*

APPENDIX A

COMPLIANCE ASSURANCE MONITORING PLAN

COMPLIANCE ASSURANCE MONITORING PLAN: THERMAL OXIDIZER FOR VOC/HAP EMISSION CONTROL ON TEG DEHYDRATORS WILLIAMS FIELD SERVICES COMPANY SADDLE RIDGE COMPRESSOR STATION

I. Background

The monitoring approach outlined below applies to the thermal oxidizer used to control emissions from the TEG dehydrators (Emission unit Nos. S5 and S6) at this facility.

A. Emission Units

Description:	TEG Dehydrator
AQD ID:	S5, S6
Facility:	Saddle Ridge Compressor Station Sublette County, WY

B. Applicable Regulation, Emission Limits, and Monitoring Requirements

Regulation:	Permit No. MD-676;
Permit limit:	
Control Efficiency:	Total hydrocarbon design control efficiency of at least 95 percent
Monitoring requirements:	Temperature in combustion unit downstream of combustion zone

C. Control Technology:

Thermal oxidizer

II. Monitoring Approach

A. Indicator: Temperature in combustion unit downstream of combustion zone

B. Indicator Range: The temperature in the combustion unit downstream of the combustion zone is continuously monitored and recorded to ensure that the system is operated in accordance with manufacturer's specifications. The minimum operating temperature downstream of the combustion zone will be 1400°F when the dehydrator is operating.

C. Performance Criteria:

1. Data Representativeness: Temperature is measured in the combustion unit downstream of the combustion zone by a thermocouple. The minimum accuracy is ±5°F.
2. Verification of Operational Status: n/a
3. QA/QC Practices and Criteria: Thermocouple checked annually.
4. Monitoring Frequency: Temperature measured continuously.
   Data Collection Procedures: The thermal oxidizer operating temperature is recorded continuously and stored on the Big Piney Sequel server.
5. Averaging Period: None, not to exceed minimum and maximum temperatures.

MONITORING APPROACH JUSTIFICATION

III. Background

Glycol dehydration systems utilize a glycol solution to remove water from natural gas. The glycol functions in a continuous, closed-loop system, and is regenerated (water stripped from the rich glycol) by heating the glycol solution with a reboiler burner. Heating of the rich glycol solution will also remove any hydrocarbons that have also been stripped from the inlet natural gas stream. When there exist hydrocarbons in the glycol dehydrator's waste gas stream, rather than venting the waste gas stream directly to atmosphere, thermal oxidation is often used to control hydrocarbon emissions.

The elevated combustion temperatures found in a thermal oxidizer are required to ensure sufficient destruction (95+%) of the volatile organic compound (VOC) fraction of the hydrocarbons while overcoming the flame-dampening characteristics found in a H_2O-rich environment.

IV. Rationale for Selection of Performance Indicators

In a thermal oxidizer, the waste gas stream is burned in the combustion unit. Since the waste gas stream temperature is generally much lower than that required for combustion, energy must be supplied to the incinerator to raise the waste gas temperature. The core of the thermal incinerator is a nozzle-stabilized flame maintained by combustion of auxiliary fuel, waste gas compounds, and supplemental air when necessary. Upon passing through the flame, the waste gas is heated from its inlet temperature to its ignition temperature. The ignition temperature varies for different compounds. The ignition temperature is the temperature at which the combustion reaction rate (and consequently the energy production rate) exceeds the rate of heat losses, raising the temperature of the gases to some higher value. Thus, any organic/air mixture will ignite if its temperature is raised to a sufficiently high level.

The organic-containing mixture ignites at a temperature between the preheat temperature and the reaction temperature. That is, ignition occurs at some point during the heating of a waste stream as it passes through the nozzle-stabilized flame regardless of its concentration. It is this ignition temperature that is monitored to ensure the sufficient destruction of VOC.

V. Rationale for Selection of Combustion Chamber Temperature Monitoring

The continuous monitoring of temperature in the combustion unit downstream of the combustion zone will ensure that the unit is operated in accordance with manufacturer's specifications. Operation of the thermal oxidizer in accordance with manufacturer's specifications will result in an optimal destruction efficiency of VOCs.